# Catalogue of Bulimulidae (Gastropoda, Euthyneura), I. Amphibuliminae

#### A.S.H. BREURE

#### Utrecht

#### INTRODUCTION

The Bulimulidae constitute a relatively large family, mainly confined to South America. At present the family includes 144 genera and subgenera. The number of specific and subspecific names available is estimated at about 3000.

The subdivision of the family into Bulimulinae, Amphibuliminae, Placostylinae, Odontostominae and Orthalicinae is mainly based on shell features. This sensu lato conception of the Bulimulidae, already held by Pilsbry (1895-1902) and Thiele (1929-1931), is also favoured by the present author. More recent authors, e.g., Zilch (1959-1960), have accorded family rank to the subfamilies, the Placostylinae excepted. However, the differences between the subfamilies are comparatively slight, e.g., the Amphibuliminae seem to differ from the Bulimulinae only in the palleal organs and the free retractor muscle system (Van Mol. 1971).

The Amphibuliminae are in my opinion entirely confined to South America. A few African genera are included in this subfamily, which may better be placed elsewhere. The genus Aillya Odhner, 1928, occurring in Cameroon (West Africa), is placed here by Odhner (1928) on account of the anatomy. Baker (1955) placed the Aillyidae in the Heterurethra, near the Succineidae. Another African genus included in the Amphibuliminae is Prestonella Connolly, 1929. It occurs in South Africa and its anatomy is unknown. Some Asiatic species, referred to this subfamily, are also excluded from the present catalogue.

The following classification of the Amphibuliminae is mainly according to Zilch (1959-1960):

Simpulopsis (Simpulopsis) Beck, 1837. Type-species: S. (S.) sulculosa (Férussac) – Lesser Antilles, Brazil, Guatemala, Mexico.

Simpulopsis (Eudioptus) Albers, 1860. Type-species: S. (E.) pseudosuccinea (Moricand) - Guyanas, Brazil.

Peltella Webb & Van Beneden, 1836. Type-species: P. palliolum (Férussac) - Brazil.

Gaeotis Shuttleworth, 1854. Type-species: G. nigrolineata Shuttleworth – Puerto Rico.

Amphibulima (Amphibulima) Lamarck, 1805. Type-species: A. (A.) patula (Bruguière) – Lesser Antilles.

Amphibulima ?(Rhodonyx) Fischer, 1873. Type-species: A. ?(R.) rubescens (Deshayes) – Lesser Antilles.

Pellicula Fischer, 1856. Type-species: P. appendiculata (Pfeiffer) – Lesser Antilles.

It was thought advisable to give full bibliographic data in the catalogue and not to cite the papers separately in a list of references. A bibliography on the Bulimulidae will be published in future.

The type locality, of each species, as recorded in the original publication, and the depository of the type, if known, are given.

The following abbreviations have been used:

ANSP - Academy of Natural Sciences, Philadelphia.

BMNH - British Museum (Natural History), London.

DZSP - Departamento de Zoologia, Universidade de Sao Paulo, Sao Paulo.

MHNG - Muséum d'Histoire Naturelle, Geneva.

MNHN - Muséum National d'Histoire Naturelle, Paris.

NMBN - Naturhistorisches Museum, Bern.

UMMZ - Museum of Zoology, University of Michigan, Ann Arbor.

ZMB - Zoologisches Museum der Humboldt Universität, Berlin.

#### **CATALOGUE**

aenea, Simpulopsis, Pfeiffer, 1861. Proc. zool. Soc. Lond. 1861: 27 (Mexico, La Parada [Edo. Oaxaca]) [BMNH].

albopunctulata, Gaeotis, Shuttleworth, 1854. Mitt. naturf. Ges. Bern 1854: 36 ([Puerto Rico] Humacao) [syntypes: NMBN].

Amphibulia Rafinesque, 1815. Analyse de la nature: 17 [emend.]. Amphibulima Lamarck, 1805. Annls Mus. natn. Hist. nat. Paris 6: 304.

- Type-species (Gray, 1847): Amphibulima cucullata Lamarck = A. patula (Bruguière).
- appendiculata, Succinea, Pfeiffer, 1847. Z. Malak. 4: 146 (Guadeloupe).
- atrovirens, Helix (Cochlobydra), Moricand, 1836. Mém. Soc. Phys. Hist. nat. Genève 7: 416, pl. 2 fig. 1 ([Brazil] Portao).
- Boissieri, Helix (Bulimus), Moricand, 1846. Mém. Soc. Phys. Hist. nat. Genève 11: 156, pl. 5 figs. 24-25 ([Brazil] Bahia) [paratype: MHNG].
- Brachyspira Pfeiffer, 1855. Malak. Bl. 2: 117. Type-species (Martens, 1860): Helix tigrina Lesueur = Amphibulima (A.) tigrina (Lesueur).
- brasiliensis, Helix (Cochlohydra), 'Sowerby' Moricand, 1836. Mém. Soc. Phys. Hist. nat. Genève 7: 416 [nomen nudum].
- brasiliensis, Succinea, Moricand, 1846. Mém. Soc. Phys. Hist. nat. Genève 11: 148, 160, pl. 5 fig. 5 ([Brazil] S. Gonzalves).
- browni, Amphibulima, Pilsbry, 1899. Man. Conch. (2) 12: 238, pl. 61 figs. 28-31 (Dominica, 1000 feet) [lectotype: ANSP 9884].
- Bulimulopsis Pilsbry, 1899. Man. Conch. (2) 12: 220 [proposed as a new name for Eudioptus Albers, 1860 not Eudioptis Hübner, 1816 (Lepidopt.)].
- christopheri, Amphibulima patula, Pilsbry, 1902. Man. Conch. (2) 14: lxix, pl. 60 figs. 11-12, pl. 62 figs. 27-30 (St. Kitts) [lectotype: ANSP 3723]).
- citrino-vitrea, Helix (Cochlogena), Moricand, 1836. Mém. Soc. Phys. Hist. nat. Genève 7: 436, pl. 12 fig. 19 ([Brazil] aux environs de Bahia [= Salvador]).
- corrugatus, Simpulopsis, Guppy, 1866. Ann. Mag. nat. Hist. (3) 17:53 (Trinidad, near Savanna Grande) [BMNH].
- cucullata, Amphibulima, Lamarck, 1805. Ann. Mus. natn. Hist. nat. Paris 6: 305, pl. 55 fig. 1 [no type locality].
- cumingi, Simpulopsis, Pfeiffer, 1861. Proc. zool. Soc. Lond. 1861: 27, pl. 3 fig. 2 (Mexico) [BMNH].
- decussata, Simpulopsis, Pfeiffer, 1856. Malak. Bl. 3: 260 ([Brazil] Petropolis prope Rio de Janeiro).
- depressa, Pellicula, Fischer, 1856. Actes Soc. linn. Bordeaux 20: 449, pl. 6 figs. 5-11 (Guadeloupe).
- depressa, Succinea, Rang, 1835. Mag. Zool. 5, cl. V: pl. 55 + text (Guadeloupe, dans les montagnes) [syntypes: MNHN].
- dominicanus, Amphibulima patula, Pilsbry, 1899. Man. Conch. (2) 12: 237, pl. 61 figs. 16-18 (Dominica) [lectotype: ANSP 26053].
- Dominicensis, Simpulopsis, Pfeiffer, 1858. Malak. Bl. 5: 146. ([Hispaniola] Mt. Diego Campos [?]).
- Eudioptus Albers in Martens, 1860. Die Heliceen, 2nd ed.: 223. Type-

- species: Helix pseudosuccinea Moricand = Simpulopsis (E.) pseudosuccinea (Moricand).
- flavolineata, Gaeotis, Shuttleworth, 1854. Mitt. naturf. Ges. Bern 1854: 35 ([Puerto Rico] Sierra de Luquillo et ad Rio Blanco) [syntypes: NMBN]
- Gaeotis Shuttleworth, 1854. Mitt. naturf. Ges. Bern 1854: 34. Type-species: Gaeotis nigrolineata Shuttleworth.
- iheringi, Peltella, Leme, 1968. Papéis Dep. Zool. S Paulo 21: 197, figs. 1-13, pl. (Brazil, São Paulo, Salesópolis, Boracéia, Poço Prêto) [holotype: DZSP 17982].
- limpidus, Bulimus, Drouët, 1859. Moll. terr. fluv. Guyana fr.: 64, pl. 2 figs. 23-24 ([French Guyana] Ilet-la-Mère).
- magnus, Simpulopsis, Thompson, 1957. Occ. Papers Mus. Zool. Univ. Mich. 591: 4, pl. 1 (Venezuela, Edo. Aragua, Rancho Grande) [holotype: UMMZ 191736].
- malleata, Gaeotis, Pilsbry, 1899. Man. Conch. (2) 12: 230, pl. 62 figs. 36-40 (Puerto Rico, near San Juan) [holotype: ANSP 26052].
- Mastogyra Ancey, 1881. Naturaliste 3: 484. Type-species: Succinea rubescens Deshayes = Amphibulima (Rhodonyx) rubescens (Deshayes).
- membranacea, Succinea, 'Michaud' Villa & Villa, 1841. Dispositio syst.: 9 ([Brazil] Bahia).
- Miersi, Simpulopsis, Pfeiffer, 1856. Malak. Bl. 3: 260 ([Brazil] Esperito Santo).
- nigrolineata, Gaeotis, Shuttleworth, 1854. Mitt. naturf. Ges. Bern 1854: 35 ([Puerto Rico] Sierra de Luquillo) [syntypes: NMBN].
- obtusa, Succinea, Sowerby, 1820/1822. Genera of shells, pl. Succinea fig. 2 [= ovata].
- ovata, Succinea, Sowerby, 1820/1822. Genera of Shells, Succinea text p. 2 (Brazil).
- palliolum, Parmacella, Férussac, 1821. Tabl. syst. moll., Limaces: 25 (Brésil) [holotype: MNHN].
- pardalina, Amphibulima, Guppy, 1868. Ann. Mag. nat. Hist. (4) 1: 432 (Dominica).
- patulus, Bulimus, Bruguière, 1792. Encycl. méth. Hist. nat. Vers 6: 305 (Guadelupe).
- Pellicula Fischer, 1856. Actes Soc. linn. Bordeaux 20: 449. Type-species: Pellicula depressa Fischer = P. appendiculata (Pfeiffer).
- Peltella Webb & van Beneden, 1836. Mag. Zool. 6, cl. V: text for pls. 75-76. Type-species: Parmacella palliolum Férussac = P. palliolum (Férussac).
- progastor, Helix (Cochlobydra), Orbigny, 1835. Mag. Zool.5, cl. V: 2. (Brasilianis oris [= Brazil, coastal area]).

- pseudo-succinea, Helix (Cochlogena), Moricand, 1836. Mém. Soc. Phys. Hist. nat. Genève 7: 435, pl. 2 fig. 18 ([Brazil] aux environs de Bahia [= Salvador]) [holotype: MHNG].
- psidii, Bulimus (Eudioptus), Martens, 1877. Jb. dt. malak. Ges. 4: 351, pl. 12 fig. 6 (Puerto Rico, Caguana bei Utado) [syntypes: ZMB 27218].
- Rawsonis, Amphibulima, Bland, 1875. Ann. Lyc. nat. Hist. N.Y. 11: 199 (Montserrat).
- Rhodonyx Fischer, 1873. J. Conchyl. Paris 21: 325. Type-species: Succinea rubescens Deshayes = Amphibulima (R.) rubescens (Deshayes).
- rubescens, Succinea, Deshayes, 1830. Mag. Zool.1, cl. V:4, pl. 4 figs. 1-2 (Guadeloupe) [paratypes: MNHN].
- rufovirens, Helix (Succinea), Moricand, 1846. Mém. Soc. Phys. Hist. nat. Genève 11: 147, pl. 5 fig. 4 (Brésil, dans la province de Bahia) [paratype: MHNG].
- Simpulopsis Beck, 1837. Index Moll.: 100. Type-species (Gray, 1847): Helix sulculosa Férussac = S. (S.) sulculosa (Férussac).
- simulus, Bulimus, Morelet, 1851. Test. noviss. 2: 11 (sylvas Petenensis arborum [=Guatemala, Dept. Petén]).
- sulculosa, Helix (Cochlobydra), Férussac, 1821. Tabl. syst. moll., Limaçons: 27 (Brésil) [syntypes: MNHN].
- tigrina, Helix (Cochlohydra), Lesueur in Férussac, 1821. Tabl. syst. moll., Limaçons: 26 [nomen nudum]; 1821. Hist. nat. moll., pl. 11A fig. 4 (St. Vincent) [syntypes: MNHN].
- tryoni, Simpulopsis, Pilsbry, 1899. Man. Conch. (2) 12: 218, pl. 64 fig. 92 (Brazil) [holotype: ANSP 26033].
- vincentina, Simpulopsis, Smith, 1895. Proc. malac. Soc. Lond. 1: 305, pl. 21 figs. 4-5 (St. Vincent, Upper Richmond Valley, 2000 feet) [BMNH].
- Vitrinoides, Bulimus, Reeve, 1848. Conch. Icon. 5: pl. 46 fig. 290 [no type locality] [BMNH].

### ACKNOWLEDGMENTS

I am most grateful to the following persons who supplied me with data on the types in collections in their charge: Dr. E. Binder (Geneva), Dr. R. Kilias (Berlin), Dr. J.J. Oberling (Bern), and Mr. J.F. Peake (London).

## REFERENCES

- BAKER, H.B., 1955. Heterurethrous and aulacopod. Nautilus 68: 109-112.
- ----, 1963. Type land snails in the Academy of Natural Sciences of Philadelphia, II. Land Pulmonata, exclusive of North America north of Mexico. Proc. Acad. nat. Sci. Philad. 115: 191-259.
- GRAY, J.E., 1847. A list of the genera of recent Mollusca, their synonyma and types. Proc. zool. Soc. Lond. 1847: 129-219.
- MARTENS, E. VON, 1860. Die Heliceen nach natürlicher Verwandtschaft systematisch geordnet von Joh. Christ. Albers: i-xviii, 1-359. Berlin.
- ODHNER, N.H., 1928. Aillya camerunensis, n. gen., n. sp., an African bulimuloid snail. Ark. Zool. 19 (A 20): 1-16.
- PILSBRY, H.A. 1895-1902. Manual of Conchology (2) 10-14. Philadelphia.
- THIELE, J., 1929-1931. Handbuch der systematischen Weichtierkunde, 1: i-vi, 1-778. Jena.
- VAN MOL, J.J., 1971. Notes anatomiques sur les Bulimulidae (Mollusques, Gastéropodes, Pulmonés). Annls Soc. r. zool. Belg. 101: 183-226.
- ZILCH, A., 1959-1960. Gastropoda, Euthyneura. Handb. Paläozool. (6) 2: i-xii, 1-834. Berlin-Nikolassee.